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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,036	10/02/2003	John A. Mikszta	P-6088	1666

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EXAMINER
SALIMI, ALI REZA

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	**Application No.** 10/679,036	**Applicant(s)** MIKSZTA ET AL.
	Examiner A R. Salimi	**Art Unit** 1648

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2005*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8,10,11,13 and 15-25* is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-6,8,10,11,13 and 15-25* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a)☐ All b)☐ Some * c)☐ None of:
  1.☐ Certified copies of the priority documents have been received.
  2.☐ Certified copies of the priority documents have been received in Application No. _____.
  3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date *7/5/05; 3/30/05*.
4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Please note the application has been transferred to a new examiner, as Examiner McGaw is no longer with the Office. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to the undersigned examiner.

Response to Amendment

This is a response to the amendment filed 3/30/2005. Claims 7, 9, and 12 have been canceled. Claims 16-25 have been added. Claims 1-6, 8, 10, 11, 13, 15-25 are currently pending in the application.

The previously mailed Office Action is herby vacated. New grounds of rejection follow:

Claim Rejections - 35 USC § 112

Claims 1-6, 8, 10-11, 13, 15-25 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of delivering ChimerVax via OnVax microabrader wherein the delivery would induce immune response against flavivirus envelope antigen, does not reasonably provide enablement for utilizing any and all microabrader devices to be utilized in delivery of ChimerVax. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The disclosure has conducted a comparison between two microabrader devices one is MicroMedica, and the other is OnVax. The results show that the MicroMedica does not provide good results. The claims, however, are directed to any and all microabrader devices to deliver flavivirus. This has to be reconciled, obviously according to

Applicants' own comparison experimentation OnVax should be utilized, and if that's the case then why is it that claims read on OnVax, as well as MicroMedica, and any and all microabrader devices? This field is rather unpredictable, as Applicants own data proves, that two similar devices provide for rather substantially different result. One of ordinary skill in the art would be required to conduct large amount of undue experimentations to compare and contrast which if any microabrader would provide efficacious. Applicants have general statements regarding the delivery of chimeric yellow fever via microabrader device wherein delivery would induce immune response. However with regard to an unpredictable field, this does not constitute an adequate disclosure. See Fiers v. Revel (25USPQ2d 1601 at 1606; and also decision by the Federal Circuit with regard to the enablement issues see Genentech Inc. v. Novo Nordisk A/S, 42 USPQ2d 1001-1007). For example, the CAFC stated that "It is the specification, not the knowledge of one skilled in the art that must supply the novel aspects of an invention in order to constitute enablement." (See page 1005 of the decision). Therefore, considering large quantity of experimentation needed, the unpredictability of the field, the state of the art, and breadth of the claims, it is concluded that undue experimentation would be required to enable the intended claim. Many of these factors have been summarized *In re Wands, 858 F.2d 731, USPQ2d 1400 (Fed. Cir. 1988).*

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a **written description** of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-6, 8, 10-11, 13, 15-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had **possession** of the claimed invention. In the instant disclosure, Applicants have only disclosed delivery of ChimerVax via OnVax microabrader. No other devices were disclosed that provided for efficacious delivery of ChimerVax, and there is not enough information about it in literature either to guide the one of ordinary skill in the art to predict the undisclosed devices. Moreover, no other chimeric yellow fever virus besides ChimerVax is disclosed, and there is not enough information about it in literature either to guide the one of ordinary skill in the art to predict the undisclosed chimeric virus. Therefore, a written description of the other devices and other chimeric viruses should be disclosed to overcome this rejection. Applicants were not in possession of all yellow fever viruses nor they were in possession of all microabrader devices. Obtaining a device called OnVax and a well known chimeric virus such as ChimerVax does not place the current Applicants in possession of all devices or yellow virus chimeric constructs. Moreover, in order to practice the methods one had to be in possession of the devices, and the constructs, hence, the written description of the methods is also deficient. See also *University of California v. Eli Lilly and Co.*, 43 USPQ2d 1398 (Fed. Cir. 1997), which teaches that the disclosure of a process for obtaining cDNA from a particular organism and the description of the encoded protein fail to provide an adequate written description of the actual cDNA from that organism which would encode the protein from that organism, despite the disclosure of a cDNA encoding that protein from another organism. 35 USC 112 requires inter alia that a patent specification contain a written description of the invention and the manner and process of making and using it "in such full clear and concise terms as to enable one skilled in the art ... to make and use" the invention. Case law has made it clear that the requirements for a "written description" and an "enabling disclosure" are separate. For example, where a specification contains sufficient information to enable a skilled chemist to produce a particular compound because it gives detailed information on how to produce analogous compounds but it makes no reference to the compound in question, the "written description" requirement has not been met even though the description may be enabling.

See *University of California v. Eli Lilly,* 19 F.3d 1559, 43 USPQ 2d 1398 (Fed, Cir. 1997):

> The name cDNA is not in itself a written description of that DNA; it conveys no distinguishing information concerning its identity. While the example provides a process for obtaining human insulin-encoding cDNA, there is no further information in the patent pertaining to that cDNA's relevant structural or physical characteristics; in other words, it thus does not describe human insulin cDNA .... Accordingly, the specification does not provide a written description of the invention ....

and at pg 1406:

> a generic statement such as "vertebrate insulin cDNA" or "mammalian insulin cDNA," without more, is not an adequate written description of the genus because it does not distinguish the genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have previously indicted, does not suffice to define the genus because it is only an indication of what the genes does, not what it is.

See *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ 2d 1016 at page 1021:

> A gene is a chemical compound, albeit a complex one, and ... conception of a chemical compound requires that the inventor be able to define it so as to distinguish it from other materials .... Conception does not occur unless one has a mental picture of the structure of the chemical or is able to define it by its method of preparation, its physical or chemical properties, or whatever characteristics sufficiently distinguish it. It is not sufficient to define it solely by it principal biological property, *e.g.*, encoding human erythropoietin, because an alleged conception having no more specificity than that is simply a wish to know the identity of any material with that biological property.

There are no indications that in the prior application(s) Applicants were in possession of inducing immune response against chimeric flavivirus using the micro- abrader device. Applicants are herewith notified that the established effective priority date of this application is its filing date, 10/02/2003. See Paperless Accounting v. Bay Area Rapid Transit System, 804 F.2d 659 (Fed. Cir. 1986).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 8, 10-11, 13, 15-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monath et al (Journal of Virology, Feb. 2000, pages 1742-1751) and Mikszta et al (U.S Patent No. 6,595,947 B1).

The claims are directed to the method of inducing immune response against flavivirus by delivering chimeric yellow fever virus expressing envelope gene utilizing a device that abrades the skin. Additionally, the claims are directed to a kit product, of chimeric yellow fever virus antigen that induces immune response being delivered by a device.

Monath et al taught ChimerVax-JE (see the abstract). They additionally taught ChimerVax induced rapid immune response (see page 1743, top of left column). Indecently, this is the same product Applicants have employed in conducting their comparison study (see page

41 of applicants' specification). This only differs since they did not deliver their immunogenic composition via microabrader device.

Mikszta et al taught method of delivering of various biological compositions including nucleic acids based vaccines via microaberasion device including microneedle array (see the abstract, Column 7, lines 10-20, column 2, lines 30-38, and all claims).

Therefore, one ordinary skill in the art at the time of filing would have been highly motivated to induce immune response against flavivirus by using the product taught by Monath et al into a device taught by Mikszta et al absent any unexpected results. The prior art already teaches that ChimerVax induces positive immune response. Mikszta et al also taught delivery of a substance in general, and in particular delivery of plasmid, polypeptide and marker gene using microabrader. Thus, it would have been notoriously obvious for one of ordinary skill in the art being familiar with the state of the art and the above cited references to place the product of Monath et al into the device as taught by Mikszta et al. The ordinary artisan at the time of filing would not have anticipated any unexpected results. In fact the specification does not show any unexpected results. The experimentation conducted in the specification is comparisons study between a one well-known device (MicroMedica) verses another device termed OnVax. Applicants have neither structured the device nor the chimeric virus backbone. Certain optimization of the device such as needle gauge is deemed to be a design choice unless the proof of criticality is proven. Therefore, the invention as a whole is prima facie obvious absent any unexpected results.

Claims 1-6, 8, 10-11, 13, 15-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monath et al (Vaccine, 1999, Vol. 17, pages 1869-1882) and Sage et al (U.S Patent No. 6,835,184 B1).

Monath et al taught ChimerVax-JE (see the abstract). They additionally taught ChimerVax induced strong neutralizing antibodies (see page 1881). Indecently, this is the same product Applicants have employed in conducting their comparison study (see page 41 of applicants' specification). This only differs since they did not deliver their immunogenic composition via microabrader device.

Sage et al taught a device for abrading the skin to increase permeability for delivery of substance to a patient, including vaccines (see the abstract, column 4, lines 63-65, column 5, lines 1-3, lines 30-37).

Therefore, one ordinary skill in the art at the time of filing would have been highly motivated to induce immune response against flavivirus by using the product taught by Monath et al into a device taught by Sage et al absent any unexpected results. The prior art already teaches that ChimerVax induces positive immune response. Sage et al also taught delivery of a substance in general, and in particular delivery of DNA Vaccines and other vaccines and viral agents. Thus, it would have been notoriously obvious for one of ordinary skill in the art being familiar with the state of the art and the above cited references to place the product of Monath et al into the device as taught by Sage et al. The ordinary artisan at the time of filing would not have anticipated any unexpected results. In fact the specification does not show any unexpected results. Certain optimization of the device such as needle gauge is deemed to be a design choice unless the proof of criticality is proven. Therefore, the invention as a whole is prima facie obvious absent any unexpected results.

No claims are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. R. Salimi whose telephone number is (571) 272-0909. The examiner can normally be reached on Monday-Friday from 9:00 Am to 6:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached on (571) 272-0902. The Official fax number is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. R. Salimi

12/2/2005

ALI R. SALIMI
PRIMARY EXAMINER